A Not So Simple LaTeX file

Liangzhou Yi

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Mathmatics

Equation 1 is a displayed equation.

$$f(x_{n+1}) = f(x_n) \quad \frac{f(x_n)}{f'(x_n)} \tag{1}$$

We can also include inline formula (within text) here. $p(x) = \sum_{i=1}^{n+1} y_i \varphi_i(x) = \sum_{i=1}^{n+1} y_i (\prod_{j \neq i} \frac{x - x_j}{x_i - x_j})$.

Tree

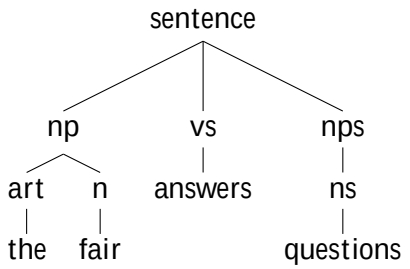

Figure 1: The parse tree of a sentence using our modified grammar.

Table

	Top-down	Bottom-up	Top-down Chart
sentence:	3	7	3
np :	5	6	3

Figure 2: Comparision of three parsers.

Figure 2 is a table.

Figure

Figure 3 is a picture we input from a le.

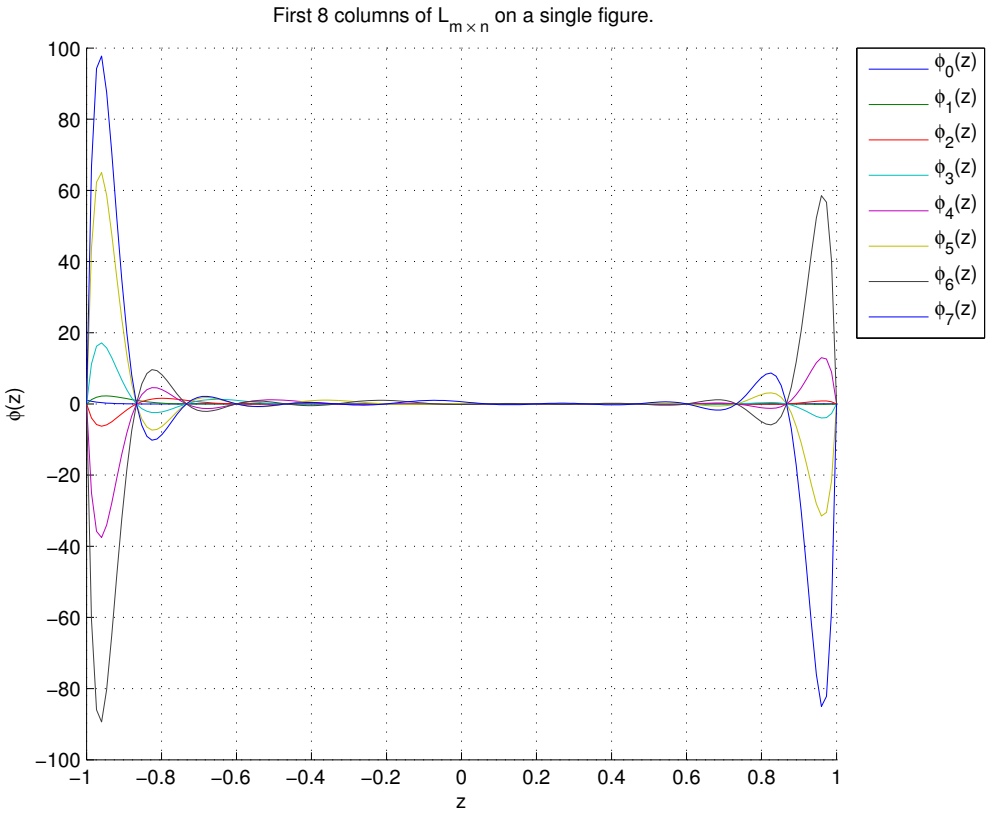

Figure 3: Lagrange basis functions over [1; 1].

Code snippet

Refer to Figure 4 for the implementation of a method producing a vandermone matrix given a row vector.

```
1  function V = vandermat(x)
2  % given a column vector x of size n+1, return a vandermat.
3  % ignoring invalid paramter check
4
5  n = size(x, 1); % number of elements in vector x.
6  V = repmat(x, 1, n) .^ (repmat([0:(n-1)], n, 1));
7  end
```

Figure 4: Source code of method vandermat(x) in Matlab

Good references

LaTeX wikibooks